## CLAIMS

What is claimed is:

1. A frequency converter comprising:

first, second, third and fourth mixers, each receiving a signal to be frequency converted;

first, second and third quadrature dividers, each quadrature divider receiving an input signal and providing an inphase and a quadrature component of the respective input signal;

the first quadrature divider receiving an oscillator signal and providing inphase and quadrature components of the oscillator signal as inputs to the second and third quadrature dividers, respectively;

the inphase and quadrature component outputs of the second quadrature divider providing signals to pump the second and first mixers, respectively;

the inphase and quadrature component outputs of the third quadrature divider providing pumping signals to the fourth and third mixers, respectively;

the first and fourth mixers providing quadrature components for combining to provide a quadrature frequency converter output; and,

the second and third mixers inphase and out-of-phase components, respectively, for combining to provide an inphase frequency converter output.

2. The frequency converter of claim 1 wherein the mixers and the quadrature dividers are formed as part of a single integrated circuit.

3. The frequency converter of claim 2 wherein the mixers are fabricated by replication of the same mixer circuit.

4. The frequency converter of claim 2 wherein the quadrature dividers are fabricated by replication of the same quadrature divider circuit.

5. The frequency converter of claim 2 wherein the mixers and quadrature dividers are fabricated by replication of the same mixer and quadrature divider circuits, respectively.

6. The frequency converter of claim 1 further comprised of a quadrature combiner coupled to the output of the mixers.

7. The frequency converter of claim 1 wherein the signal to be converted is an RF signal.

8. The frequency converter of claim 7 wherein the mixer outputs are baseband signals.

9. The frequency converter of claim 1 wherein the oscillator is a local oscillator.

10. A method of frequency conversion comprising:

providing four signals to pump four mixers, the four pumping signals being respective outputs of two quadrature dividers, each having as an input, a respective output of a third quadrature divider receiving an oscillator signal as an input;

providing a frequency to be converted to all four mixers; and,

combining the outputs of two pairs of the four mixers to provide the inphase and the quadrature components of the frequency converted signal.

11. The method of frequency conversion of claim 10 wherein the mixers and the quadrature dividers are formed as part of a single integrated circuit.

12. The method of frequency conversion of claim 11 wherein the mixers are fabricated by replication of the same mixer circuit.

13. The method of frequency conversion of claim 11 wherein the quadrature dividers are fabricated by replication of the same quadrature divider circuit.

14. The method of frequency conversion of claim 11 wherein the mixers and quadrature dividers are fabricated by replication of the same mixer and quadrature divider circuits, respectively.

15. The method of frequency conversion of claim 10 further comprised of a quadrature combiner coupled to the output of the mixers.

16. The method of frequency conversion of claim 10 wherein the signal to be converted is an RF signal.

17. The method of frequency conversion of claim 16 wherein the mixer outputs are baseband signals.

18. The method of frequency conversion of claim 10 further comprising generating the oscillator signal using a local oscillator.